# DEPARTMENT OF TRANSPORTATION
# STATE OF GEORGIA

**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** IM-NH-75-1(227) Dooly
P. I. No.: 311665
I-75 @ S.R. 27 Interchange

**OFFICE:** Engineering Services

**DATE:** June 6, 2007

**FROM:** Brian Summers, P.E., Project Review Engineer RBW

**TO:** Brent Story, P.E. State Road and Airport Design Engineer

**SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES**

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate alternatives recommended for implementation to the extent reasonable in the design of the project.

| ALT No. | Description | Savings PW & LCC | Implement | Comments |
|---|---|---|---|---|
| 3 | Utilize the existing County Road 209 & 340 alignments and tie to newly constructed S.R. 27 | $614,533 | No | This would require a Design Variance since the intersection of CR 209 would be approximately 240' from the centerline of the ramp. |
| 4 | Utilize the existing County Road alignments by shifting CR 209 to the East to align with CR 340. | $564,577 | No | There would be a substantial grade change required to tie the CR 208/340 intersection to the new S.R. 27 profile grade. |
| 5 | Eliminate the end spans of the S.R. 27 bridge over I-75 and use a MSE Wall end span Abutments. | $607,451 | Yes | This should be done. |
| 6 | Reduce the distance between Ramps A/C and B/D and reduce the lengths of all the ramps. | $1,773,904 | No | Reducing the distance between the Ramps would affect the storage lengths and tapers on the turn lanes as well as the overall effectiveness and operation of the interchange. |

| ALT No. | Description | Savings PW & LCC | Implement | Comments |
|---|---|---|---|---|
| 7 | Reduce the width of the S.R. 27 bridge over I-75 to 53'-3". | $620,288 | No | Removing the raised median and shifting the ramp termini closer would affect the storage lengths and tapers on the turn lanes as well as the overall effectiveness and operation of the interchange. |
| 8 | Eliminate the turn lanes beyond the on/off ramps and the bridge on S.R. 27. | $471,077 | No | The raised median provides a physical barrier between opposing traffic. Deleting the turn lanes would reduce the effectiveness and operation of the interchange. |
| 10 | Delete the Connector Roads and replace them with access at the point the new proposed alignment departs from the existing alignment. | $142,869 | Yes | This should be done or at least modified as long as R/W acquisition hasn't progressed to the point where this is no longer feasible. |
| 12 | If CR 155 is relocated 300' from the new on/off ramp, provide direct access to the service stations on the south side of S.R. 27 | Design Suggestion | No | There would be a substantial grade change required in order to tie the service stations to S.R. 27. |
| 13 | Consider using Asphalt Concrete for all or part of the ramp pavement. | Design Suggestion | Yes | This will be considered along with PCC in the Pavement Design Analysis on this project which has not been completed at this time. |
| 15 | Revise the profile grades by using steeper grades to reduce the amount of Earthwork. | $1,231,505 | No | This scheme would not provide adequate Intersection Sight Distance for the I-75 NB off ramp/S.R. 27 intersection. |
| 16 | Consider minimizing the pavement section on county roads | Design Suggestion | No | The pavement section has been minimized as much as possible. |
| 17 | Construct the ramps as located but delete the new 12'Concrete Pavement for future growth | $504,667 | Yes | This should be done. |

| ALT No. | Description | Savings PW & LCC | Implement | Comments |
|---|---|---|---|---|
| 18 | Combine VE ALT Nos. 4, 5, 6, 7, 15 & 17 into one optimal scheme | $4,218,000 | No | These VE Alternates have already been considered separately and the recommendations are noted above. |

A meeting was held on June 6, 2007 to discuss the above recommendations. Brent Story, Daniel Pass, Sam Woods, and David Acree with Road Design, and Brian Summers, Ron Wishon and Lisa Myers with Engineering Services were in attendance.

**Approved:** _____ **Date:** 6/8/07
**David E. Studstill, Jr., P. E., Chief Engineer**

**Approved:** _____ **Date:** 6/15/07
**for** **Rodney Barry, P. E., FHWA Division Administrator**

BKS/REW

Attachments

c: Gus Shanine
Jessica Granell
Todd Long
Lamar Pruitt
David Acree
Jenifer Mathis
James Magnus
Judy Meisner
Ken Werho
Lisa Myers

# DEPARTMENT OF TRANSPORTATION
# STATE OF GEORGIA


## INTERDEPARTMENTAL CORRESPONDENCE

**FILE** IM-NH-75-1(227) Dooly County
I-75 @ SR 27 Interchange
P. I. Number: 311665

**OFFICE** Road Design

**DATE** March 20, 2007

**FROM** Brent A. Story, P.E., State Road & Airport Design Engineer

**TO** Brian Summers, P.E., State Project Review Engineer

**SUBJECT** **RE: Value Engineering Study – Final Report Responses**

This Office has reviewed the ten recommendations provided in the Value Engineering Study Report. Please see the responses in the attached document.

If you need additional information please contact David Acree at 404-656-5180.

BAS: RDA

CC:
Lisa Myers

Value Engineering Study
Project IM-NH-75-1(227), Dooly County
SR 27 @ I-75 Interchange Reconstruction
PI 311665

March 20, 2007

This office has reviewed and considered suggestions presented in the Value Engineering Report submitted by the Office of Engineering services and prepared by PBS&J. Listed below are the decisions reached concerning the implementation of the 10 value engineering recommendations contained in the report.

Alternate #3
Recommendation - Utilize existing County roads. This recommendation proposes to retain the current location of CR 340 and CR 209 which are to the east of the interchange

Implementation – The decision is not to implement this recommendation. It would require a design variance to leave CR 209 at the current location. CR 209 would only be 240' from the centerline of the proposed ramp. This does not meet the 300' minimum requirement for access control, "Chief Engineers Policy 4A-3 Establishing Access Control". Changing the location of the ramp is not desirable as approximately 978' is proposed to be provided between the ramps. The distance between the ramps provides the length for a left turn / deceleration lane.

Alternative #4
Recommendation - Utilize existing County Roads by shifting CR 209 to the East to align with CR 340.

Implementation – The decision is not to implement this recommendation. This recommendation requires that the distance between the ramps be reduced from 978' to 678' which would reduce the effectiveness of the left turn / deceleration lanes to the north and south bound entrance ramps to I-75.

Alternative # 5
Recommendation - Eliminate end Spans and use Wall Abutments

Implementation – The decision is not to implement this recommendation (includes recommendation from the Office of Bridge Design). The cost savings mentioned is not correct because the cost of the MSE wall was not considered. The savings would be reduced by $561,022 to $89,490 when including the price of the MSE wall. Generally this type of bridge is used to minimize Right of Way impact in urban areas. Also mentioned in the 'Technical Discussion" section is that the implementation of the MSE wall will allow the on and off ramps to be located closer to the original location. This would reduce the overall operational benefits by reducing left turn deceleration lanes.

Alternate # 6
Recommendation- Reduce distance Between Ramps A/C and B/D. Reduce length of all ramps.

Implementation – The decision is not to implement this recommendation. Reducing the distance between the ramps reduces the proposed operational improvements.

Alternate # 7
Recommendation – Reduce Bridge width to 53'3"

Implementation – The decision is not to implement this alternate. Removing the section of raised median between the bridges will decrease the safety and operation improvement proposed for this interchange. The median provides physical separation between the oncoming high speed traffic (55 mph posted speed) and lower speed turning traffic. The median also serves as a guide to separate the conflicting turning movements to the north and south bound entrance ramps to I-75. The 10' outside shoulder on the bridge matches typical graded roadway shoulder.

Alternative # 8
Recommendation - Reduce Roadway width by eliminating turn lanes

Implementation – The decision is not to implement this recommendation. The turn lanes and median to the relocated side roads increase safety and operation by reducing conflicts and provides a physical barrier between conflicting traffic movements. The proposed design continues the median to protect the functional area of the ramp intersections and the county route intersections with SR 27. The assumption made by the VE team that the area was urban is incorrect. This area is rural and rural design criteria should be maintained. The design does not preclude possible future development but sets the interchange up so if development occurs it will not degrade the safety or operation of the interchange. The design also allows for and forces the use of appropriate connector roads to be established if development occurs.

Alternative # 10
Recommendation – Delete new connector Roads to CR 290 and CR 340.

Implementation – Decision is not to implement this recommendation as suggested. The proposed location of the connector roads is an adequate distance away from SR 27 and is to provide access for the property owners off the existing County Roads. If requested during R/W negotiations, consideration will be given to remove or relocate the connector roads. Button hooks as recommended are not desirable and will not be implemented.

Alternative # 15
Recommendation – Revise Grades and vertical curves to reduce earthwork. A recommended profile was provided by the VE team.

Implementation – Decision is not to implement this recommendation. The recommended profile does not provide adequate intersection sight distance for the I-75 NB off ramp / SR 27 intersection.
The vertical curve provided meets necessary Stopping sight distance but it appears intersection sight distance at the ramps was not considered. Intersection sight distance at the ramp intersection with SR 27 is a critical design issue to improve safety along the interchange.

Alternative # 17
Recommendation – Delete new Future 12' lanes in ramp areas

Implementation – This recommendation will not be implemented at this time. GDOT representatives from District and General Office of Construction recommended keeping the future lanes in this design. This will be discussed at the upcoming FFPR.

Alternative # 18
Recommendation – Combine Alternates 4,5,6,15,17 into design "Scheme I"
Implementation – This recommendation will not be implemented due to the reasons listed above.